NUMBER 211 APRIL 22, 1930

OCCASIONAL PAPERS OF THE MUSEUM OF ZOOLOGY

UNIVERSITY OF MICHIGAN

ANN ARBOR, MICHIGAN PUBLISHED BY THE UNIVERSITY

CONTRIBUTION TO THE KNOWLEDGE OF THE REPTILES AND AMPHIBIANS OF GREECE, ESPECIALLY THE AEGEAN ISLANDS

BY FRANZ WERNER

WITH the support of the Museum of Zoology, University of Michigan, I had the opportunity in 1927 of undertaking a trip to Greece for the purpose of studying and collecting the reptiles and amphibians, ants, Orthoptera, and land mollusks. It was possible for me to visit some of the islands of the Aegean Sea from which no reptile material exists in any museum and from which no species have been recorded in literature. These islands are: Ios (south of Naxos, in the Cyclades), Scyros, Skopelos, and Kyra Panagia of the Northern Sporades Archipelago, and Mytilene and Lemnos, belonging to the Asiatic part of the Aegean.

There is still much to be learned of the fauna of the Aegean Islands. Not only are the species, especially the lizards, markedly different on these islands, thus throwing light on the manner and the relative time of the dissolution of the ancient land-mass, but also there are many erroneous records of the reptiles in literature, especially by Erhard and Erber. Erhard was unacquainted with herpetological systematics,

and Erber probably mixed in his collections specimens of different islands and even of the Greek mainland.

Since it is much easier to find a species new for an island than it is to show with certainty that another species cannot exist there, because it is always possible that the explorer has overlooked it, this second task can be undertaken only by one who knows the species so well biologically that he may say, on the basis of his experience, that certain species are probably not to be found there. Rarely is he helped on this point by the natives, particularly in Greece and in many parts of Dalmatia, where no one distinguishes the different species of lizards or snakes. Though we are, therefore, still far from a thorough knowledge of the reptile fauna of the islands, I hope that this paper, illustrated by the excellent photographs of Professor Schoenwetter, of Vienna, will prove to be a substantial contribution to the subject.

List of Species

Testudo marginata Schpff.

Male ad.; Mt. Parnes, near Athens, about 1200 m., April 24.
Female ad.; Mt. Hymettus, near Athens, April 20.
Male ad.; Mt. Ossa, near Larissa, Thessaly, May 14.

This is the largest of all Greek tortoises; the male from Mt. Parnes weighs 3.85 kg. I saw two more adult specimens, drowned in a water-hole at the foot of this mountain. This is a true mountain form and I have never met with it in the plains; it is also a strictly mainland species. In Larissa it seems to meet the northernmost point of its distribution; it is not known beyond Greece.

The male mentioned above (length of carapace 34–40, measured along the curvature of the back, length of plastron 26.5, greatest width of carapace in the flat, dilated rear 22.5 cm.) is remarkable for the very irregular nature of vertebral shields one and two, and for the transverse division of the fourth vertebral.

Testudo ibera Pall.

Young specimen; Lemnos, May 24.
Adult female; Lemnos, May 28.

No land tortoise has been known from the islands of Asia Minor north of Kos. The occurrence of the Asiatic *T. ibera* on Lemnos, together with the likewise strictly Asiatic lizard *Ophiops elegans*, shows clearly that this island, though more distant from the coast of Asia Minor than any of the other coastal islands, has preserved its Asiatic character. I found the young specimen under a stone in the valley of the warm-water river in western Lemnos. The adult specimen was purchased in the city of Lemnos from a woman who had kept it alive for some time in her garden.

Testudo graeca L.

Found by my companion, K. H. Rechinger, near the base of a low hill near Gjevgjeli, at the Greco-Servian frontier. This species must be common there. It is widely distributed over Greece, but is represented by *T. marginata* in the mountainous districts of the east. I strongly suspect that all *graeca* quoted by Fiedler from Attica were young *marginata* and that the *graeca* recorded from the Cyclades by Erhard and Heldreich are occasionally introduced animals.

Clemmys caspica rivulata Val.

Naxos, April 10 (3 spec.).
Linaria, Skyros Island, May 6 (3 spec.).
Lemnos, May 28 (3 spec.).

This water tortoise is common everywhere in Greece and is known from the following Aegean islands: Andros (Erhard); Tenos (Bedriaga); Mykonos (Erhard, Bedriaga); Syra and Seriphos (Bedriaga); Siphnos (Erhard, Heldreich, Bedriaga); Naxos (Erhard, Heldreich); Amorgos (Erhard); Melos (Bedriaga). It has not been found previously on any islands in the northern part of the Aegean Sea, except Kos (Herzog) and Rhodes (Festa).

The largest specimen, from Naxos, caught in a brackish pond near the coast (not far from the port of Naxia), measures 16 cm. in plastral length. The Scyros specimens were likewise from near the coast, not far from Linaria, in a brook

margined by swampy terrain and difficult to reach. Similarly in the locality at Lemnos, where they were frequently to be seen in the warm-water river near the west coast, the animals were very difficult to catch, the more so as the water was rather deep there. Two specimens from Lemnos are still alive (November 30, 1929). One of them laid eggs in August (1927), but since this was during my absence from Vienna, I could determine neither the individual nor the exact date of egg-laying.

Gymnodactylus kotschyi Stdchr.

Female: Acro-Corinth, April 23.
4 males, 4 females, 4 young: Melos, April 15.
2 males, 2 females: Melos, Mt. Prophet Elias, April 16.
1 male, 1 female: Melos, April 14.
2 females: Ios, April 10.
1 male, 1 female, 2 young: Mykonos, April 13.
2 males, 7 females, 3 young: different parts of Scyros, April 30–May 6.
Female: Kyra Panagia, Bay of Hagios Petros, May 10.
1 male, 1 female: Kyra Panagia, near the monastery, April 11.

This gecko is widely, but very irregularly distributed over Greece. I know it in the Ionian Islands only from Cephalonia, where I caught a specimen in 1894. It is by no means frequent on the mainland. Bedriaga records it from the Taÿgetus and from Agrinion, Acarnania, from Tatoi in Attica (foot of Mt. Pentelicus), and from the Petali Islands, off east coast of Attica. My companion, Rechinger, found it at the castle of Acro-Corinth. The distribution on the Aegean Islands is very interesting. Bedriaga found it on Melos, Mykonos, Tenos, and Syra. I can add to these localities the island of Ios. On the other hand, no one has found it on Naxos. In the Northern Sporades it abounds on Scyros; it is not rare on Kyra Panagia, but I did not find it on Skopelos, though I overturned many stones on this island and it could not easily be overlooked, since it is common on every island where it occurs. I did not find it on Mytilene and Lemnos and I am convinced that it is not present there.

The largest specimens (one female from Melos and one female from Scyros) have a length of 100 mm. Among the

adults I counted in 2 specimens 10 longitudinal rows of dorsal tubercles, in 16 specimens 12 and in 14 specimens 14; infralabials 3–3 in 15, 2–2 in 13, 2–3 in 3 specimens; median pair in contact in 25, divided by a scale in 5 specimens; tails regenerated in 19 specimens (mostly from Scyros). In a broken egg, found May 1 on Scyros, was a fully developed embryo, measuring 35 mm.; specimens from Melos, probably bred in 1926, are 54–58 mm. long.

This gecko is one of the most common reptiles on the islands, especially on Melos and Scyros. It is found on walls of unhewn stone, on rocks, and under stones. It is not a strictly nocturnal species, since it is frequently seen at noon running along the the rocks like a *Lacerta*. It is not quick in its movements and could have been caught in much greater numbers on the two islands mentioned above. None of the specimens could be regarded as *G. oertzeni* Bttgr., since all males have 4 femoral pores, and one even 6. The latter was taken on the island of Mykonos nearest to the Southern Sporades, where the species with only two femoral pores occurs.

Hemidactylus turcicus L.

Female: Naxos, May 8.
1 male, 1 female: Scyros, May 4.
Young: Scyros, May 6.

Much more rare in the Aegean Archipelago than the former species, since it is known only from Naxos (Kruper), where I found it myself and where *Gymnodactylus* is unknown. It is more common on Scyros, especially in the valley of the brook which has its mouth near the city of Scyros. Even here it is much less frequent than *Gymnodactylus,* with which it is occasionally found under one stone.

The specimen from Naxos measures 94 mm. Of the Scyros specimens, the male is 90 mm. long, the female 97 mm.

Hemidactylus is apparently common on the mainland of Greece, though I have myself never observed it there. Dr. M. Beier brought it to me from Corfu and Cephalonia, Ionian Islands, and it has been found on the islands of Nikaria (Oertzen) and Rhodes (Festa).

Agama stellio L.

Though this lizard is said to be common on Naxos, I have not seen it there, and I have collected in very different and distant parts of the island. I have, however, seen it on rocky places of Mykonos, between the main village and the Bay of Panormos. It is very difficult to catch owing to its great speed and the many opportunities for concealment among the rocks. With the help of my companion, Rechinger, and a native boy I captured two specimens (April 12), the only ones secured. Largest specimen 275 mm., head and body 115 mm.

The species is known elsewhere, Delos (from which island I have specimens collected by Professor R. Ebner), Paros, and Antiparos. All other insular localities for European Greece given in the literature, such as Cephalonia and Crete, are surely erroneous. On the Greek mainland it occurs near Salonika. I have not seen it on Lemnos and Mytilene. It is recorded from Chios (Boettger), Rhodes (Erber, Festa), Samos (Oertzen), Nikaria, Symi, Chalki (Oertzen).

Ophisaurus apus Pall.

I have a single adult specimen from Lemnos, found dead and somewhat mutilated, by Rechinger. A specimen seen May 20 in a valley of Mytilene disappeared with great swiftness and noise among big stones which I could not turn.

Erhard records it from Naxos and the more southern Cyclades, but it seems not to have been rediscovered there by any later visitor to these islands. It is also known from a single island off the Asiatic coast of the Aegean Sea (Kos, according to Herzog).

Lacerta viridis major Blgr.

All specimens of the green lizard occurring on the islands of the Aegean Sea belong to the subspecies *major*, the typical form of which is restricted to the higher mountains (in the Peloponnesus, Parnassus, Pelion, and Olympus), upward from 1500 m., a height not reached in any of the Aegean mountains except Samothraka Island. Bedriaga knows the species from

Syra, Tenos, Seriphos, Naxos, Mykonos, Melos, and Andros. To these localities I can add Scyros, where it is not very rare; but I did not succeed in finding it or any other *Lacerta* on Lemnos and Mytilene.

It is distributed over all warmer parts of Greece, from the Ionian Islands (Corfu to Zante, Cerigo), the whole mainland (valleys and plains, hills to 1400 m.), Crete and Rhodes, to the interior of the peninsula of Asia Minor and to Syria.

I collected a very fine and large male on Hymettus (April 27) near Athens, where this species is not rare, but extremely difficult to catch, owing to its swiftness and the high and partially thorny vegetation. A young specimen was secured on Mt. Parnes at about 1200 m. (adults are not rare on the road), and two half-grown ones were taken on Scyros.

I cannot agree with Schreiber, who regarded *L. major* as a species distinct from *L. viridis,* but it is no doubt a well-defined east Mediterranean race of the green lizard, with which it is connected by *L. strigata* Eich.

Data on the specimens collected:

Male, Mt. Hymettus: total length 445 mm. (head and body 160 mm.); scales across middle of body 50; ventrals in 28 transverse series; gular transverse rows 19; collar plates 9; preanal scales 8; anal pentagonal, broader than long; femoral pores 20–19; upper head scales very convex; occipital longer and twice as broad as interparietal.

Young, Mt. Parnes: probably just hatched, coloration like the half-grown male from Scyros, April 24.

Half-grown female, Scyros, head and body 68 mm.; scales 49; ventrals 27; collar scales 10; preanal scales 8; femoral pores 16–17; a masseteric shield, separated from posterior supraoculars and supratemporals by single row of scales; occipital as broad as interparietal, but one third of its length; upper parts olive-green with five yellowish longitudinal lines, the outer one on either side forming a row of spots.

Half-grown male, Scyros: head and body 55 mm.; scales 45; ventrals 28; masseteric shield not distinguishable; occipital as broad as interparietal, half its length; femoral pores

18–18; upper parts brown; a series of small darker parts close to the vertebral line; a row of small whitish spots along the sides of the body between the insertion of fore and hind limb (as in preceding specimen).

Lacerta taurica taurica Pall.

(Plate I, Figs. 1–3)

This lizard was first found in Greece by A. Schollmayr, near Salonika. Since it has not been recorded from any other part of Greece, one would be inclined to believe that this locality is the southernmost outpost of an unbroken area of distribution (plains of Hungary, Roumania, Bulgaria, Turkey, northwest Asia Minor, Crimea). On May 14, during my visit to Larissa, Thessaly, I had the good fortune to find this grass lizard in the great Thessalian plain, from Larissa itself to the foot of Mt. Ossa. It is as much more active in its habits than the specimens which I caught in the valley of Sweet Waters near Constantinople, but otherwise very similar. The same color and pattern are found over the whole area. I have compared the Larissa specimens with topotypes from the Crimea and additional specimens from all parts of its distribution.

I could not catch more than three adult specimens. These have preserved their color to date and from them I have noted the following data:

Male ad.: total length 175 mm. (head and body 70 mm., tail regenerated to greatest part); femoral pores 18–17; ventrals in 6 longitudinal and 29 transverse rows; 55 scales across middle of body; gular scales 22 to collar; collar scales 10; no masseteric shield distinct; rostral does not touch nostril; hind limb reaches axilla; upper side bright green; lower parts bright yellow.

Female ad.: total length 150 (67) mm.; femoral pores 20–18; ventrals 6 x 31; scale rows 55; gulars 21; collar 9; rostral reaches nostril on left side; hind limb reaches carpal joint; median third of back bright green, lateral third brown; throat and chest yellowish.

Female ad.: total length 156 (61) mm.; femoral pores 21–22; ventrals 6 x 30; scale rows 57; gulars 22; collar 9; rostral touches nostril on both sides; hind limb reaches elbow; upper part bluish-pink green in the middle, brownish in the lateral thirds; lower parts uniform white.

The distribution of *Lacerta taurica taurica* Pall. reaches from Budapest, Hungary, in the north, to Larissa, Greece, in the south. It is possible that it may be found south of Larissa, but it is unknown in middle Greece and the Peloponnesus, where it is represented by *L. taurica ionica* Lehrs (Peloponnesus to South Albania, Ionian Islands), which again gives place to *L. taurica fiumana* Wern. in northern Albania, Dalmatia, Herzegovina, and Istria to South Carniola.

Lacerta taurica gaigeae, new subspecies

(Plate I, Figs. 4–6; Plate II, Figs. 7–11)

Type: Male from Scyros Island, May 5, 1927. Mus. of Zool. No. 65544.

This form, which I found on Scyros Island, is intermediate between *L. taurica ionica* and *L. taurica fiumana,* especially the females, but does not show much resemblance to the typical form. It is different, however, from all known forms of the species in the coloration of the throat. The chin-shields are margined with black, at least in adult males, and the throat behind them is more or less spotted with black. Masseteric shield large, often touching the temporals and separated from the posterior labials by a single row of scales; rather large scales between masseteric and tympanum often present. Total length 168 mm. (head and body 63 mm.) in male, 145 (62) in female; number of scales across middle of body 56–64 in males; 56–60 in females; transverse rows of ventrals 27–30 in males, 29–32 in females; gular transverse rows 25–32 (male), 23–29 (females); collar plates 8–12; 26–31 lamellae under fourth toe in males, 25–30 in females; femoral pores 22–27 in males, 20–26 in females. The hind limb reaches with the top of the fourth toe mostly to axilla or shoulder, rarely to elbow or collar in males; to axilla, elbow,

or wrist in females. The occipital is transversely divided in several specimens as in *L. erhardi naxensis* from Mykonos. Adult males are bright green above, more or less reticulated with black, especially on the sides; a dark spinal line is rarely found in males, frequently in females. Upper labials often spotted with black in adult specimens; an indistinct dorsal reticulation in females and half-grown males; a blue ocellus incompletely margined with black in both sexes, often especially distinct in females, where it interrupts the lateral lines.

This lizard is the endemic species of Scyros and has not been found elsewhere. Probably a similar form may occur on Euboea* and connect the typical *taurica* with the Scyros lizard. It is rather common on Scyros near the single brook and in other places with rich vegetation. Like all lizards of the *taurica* group, it is perfectly terrestrial.

I wish to dedicate this fine lizard to Mrs. Helen T. Gaige, herpetologist of the Museum of Zoology, University of Michigan.

Lacerta erhardi naxensis Werner

This lizard, distributed over most islands of the Cycladic Archipelago, is most nearly related to the *L. erhardi livadhiaca* Werner from middle Greece (Acarnania to Attica) and is possibly identical with it. To the same group of lizards may belong also *L. erhardi riveti* Chabanand from Albania, Macedonia, and northern Greece, which some specimens of *naxensis* greatly resemble.

It seems difficult to distinguish specimens of any form of *erhardi* from *L. muralis* by morphological characters alone and though I by no means agree with my friend Boulenger in his general point of view concerning the wall-lizards, which are arranged one after the other without any differentiation of their systematic value in his otherwise excellent work on lacertids, I must say that I cannot find a fundamental difference between the insular and continental *erhardi* and the *muralis* from the mainland and Crete. The fact that the

* No. 26559 in the Berlin Museum, an adult male collected by Oertzen on Euboea, resembles the Scyros form in coloration, but not in pholidosis.

Cycladic lizards resemble so much in their pattern and coloration the various so-called wall-lizards from Spain to Corsica, Sardinia and Italy, and the added fact that the Scyros lizard shows characters of two forms of *taurica,* would point to the possibility that the lizards of the Aegean Archipelago have preserved archaic characters and unite particular features which are found in different forms of the southwest. But as it is necessary to bring together much more material not only from the islands not visited before, but also from those where only few specimens have been found, I do not believe it advisable at present to discuss the affinities of these lizards at length and therefore I give data only for the specimens found on Naxos, Ios, and Mykonos.

1. Naxos (Plate III, Figs. 12–14)

The specimens from the village of Philoti and farther upward toward Mount Ozia are distinctly larger than those from the plain behind the main harbor of Naxia. The only adult male with uninjured tail from the first mentioned locality measures 178 mm. (head and tail 65); the females (two in number) have a length of 62–70 mm. of head and body; the males from near Naxia have a total length of 135–145 mm. (50–55); the females, 130–134 (50–54). The number of scale rows across middle of body is 54–68, 50 in females, 72 in males; transverse ventral rows 28–30 in males, 31–32 in females; transverse gular rows 27–31; collar scales 9–12; lamellae below fourth toe 28–32; femoral pores 20–23 in males, 20–22 in females; the hind limb reaches with the tip of fourth toe to the shoulder (rarely axilla or collar) in males; wrist or elbow in females. Masseteric shield moderately large or small; occipital rarely divided transversely (compare the Mykonos form!).

The specimens show a very slight or no trace of green on the upper surface. The male from Philoti is rather dark gray-brown, upper labials spotted with blackish brown, posterior chin-shields margined with blackish, lower parts grayish-red, limbs and tail yellowish, marginal ventrals bluish.

Of the females one is lighter, the other darker gray-brown; the former has the posterior supralabials spotted with black, the latter does not; the first is bluish white below, the limbs and tail yellowish; the second has a pearl-gray throat, white ventrals, those of the marginal row with a dark spot.

The females from Naxia resemble more or less the lighter one from Philoti; the males are similar to the Philoti male, or more or less strongly reticulated, all rather dark gray-brown, lower parts greenish or yellowish-white.

2. Ios (Plate III, Figs. 15–17)

I captured only four specimens, three males and a female. They are all big animals, two of them larger than the largest from Naxos (male 180–185 mm., head and body 65–70); scale rows across middle of body 58–60, ventral transverse rows 27–29, gular transverse rows 28–35, collar plates 10–11; lamellae below fourth toe 27–29; femoral pores 20–23 in the males, 20 in the female; the tip of fourth toe reaches to the shoulder in the males, to the wrist in the female; masseteric shield of medium size or small.

One male was bluish olive-green with a delicate reddish-brown reticulation laterally; lower parts greenish-white, marginal ventrals blue. The other males are gray-brown above, yellowish below, the female lighter than this above, white below.

It is interesting to see that nearly all forms of wall-lizards occurring in the Aegean Islands produce nearly uniformly greenish varieties, such as are known also from *L. hieroglyphica* Berth. (islands of Sea of Marmora), from *L. taurica ionica* Lehrs and *L. taurica fiumana* Wern., as well as *L. serpa* Ref.

I can find no remarkable difference between the specimens from Naxos and Ios. More distinct are those from Mykonos.

3. Mykonos Island

Unfortunately I did not secure males on this island. They are very difficult to catch. They are bright green above. Another remarkable feature of this form is the transverse division of the occipital in no fewer than three of the four

specimens which I collected. A third distinctive character is the very small or nearly indistinguishable masseteric plate in this form, which may ultimately be separated from the others if more material is available. The Mykonos specimens are rather large also. The only intact female measures 182 mm. in total length (72 head and body, which is larger than any specimen from Naxos or Ios). The number of scale rows across the middle of the body is the same as in specimens from Ios (58–60); ventral transverse rows are 30–33; gulars 30–39; collar plates 9–10; subdigital lamellae (fourth toe) 26–28; femoral pores 19–22. The hind limb reached the elbow or wrist with the tip of the fourth toe.

All specimens are light grayish-brown above, upper lip more or less spotted with blackish-brown, lower parts white, marginal ventrals show traces of bluish, throat sometimes punctuated with black.

Lacerta erhardi ruthveni, new subspecies

(Plate IV, Figs. 18–22)

Type.—Male from Kyra Panagia, Northern Sporades, Bay of Hagios Petros, May 10.

Diagnosis.—A stout form of the *erhardi* group with a number of scales across middle of body much above the average of *naxensis* (68 against 58) and normally without a trace of green on the upper surface; males reticulated, females not distinctly striped; throat of adult male not spotted with black. By these characters this lizard is easily distinguished from *naxensis* and *milensis.*

Description of the type specimen.—Total length 177 mm., head and body 70 mm.; length of head 15 mm.; 68 scales across middle of body; 30 transverse rows of ventrals; 33 transverse rows of gulars; 12 collar plates; 33 lamellae below fourth toe; 24–23 femoral pores; masseteric shield nearly indistinguishable. Hind limb reaches the shoulder with tip of fourth toe. Upper surface gray-brown, distinctly reticulated on the sides, much less so on the back; throat bluish-gray, ventrals reddish, lateral row blue.

I did not capture more specimens on Kyra Panagia because the rather dense vegetation prevented my doing so, although this lizard is not rare on the island nor on a very small island in the Bay of Hagios Petros. Some specimens were rather dark, nearly blackish. As the same form occurs also on Skopelos, it is to be expected that it lives also on the intermediate islands of Khiliodromia, Xeronisi, and others. Rechinger, who paid a visit of some hours to Giura Island, opposite Kyra Panagia, failed to note lizards there, though they might be found if one made a longer search on this rocky and not easily accessible island. Probably it is also represented on Grammusa Island, not far from Giura.

On Skopelos, heavy rainfall drove the lizards back to their hiding places on two days. Nevertheless I caught several, among them a specimen which is nearly uniformly olive-green above, much resembling the varieties which have been named *olivacea* in *Lacerta serpa* and *imitans* in *Lacerta taurica fiumana,* especially the latter. This has the same length as the type, but the tail is somewhat longer, the length of head and body only 68 mm. The largest male specimen from Skopelos is 180 mm. long (60), the largest female 150 mm. (62, tail regenerated). The masseteric plate is mostly very small—in some specimens moderately large, never large. Scale rows 62 in females, 7 in males; ventral transverse rows 26–29 in males, 28–30 in females; gular rows 29–32; collar plates 8–11; subdigital lamella of fourth toe 30–31; femoral pores 20–24. The fourth toe of the hind limb reaches the shoulder or the collar in the male, axilla or elbow in the female.

A light dorso-lateral line beginning on the hind outer edge of each parietal is more or less distinct, but even in females it is never sharply defined.

This very distinct lizard from a group of islands never explored before herpetologically, I name after Professor Alexander G. Ruthven.

Lacerta erhardi milensis Bedr.

(Plate V, Figs. 23–28)

The lizard from Melos, though closely related to the other Cycladic lizards of the *erhardi* group, is very different from them in the coloration of the lower parts. In this character it is strikingly similar to the *Lacerta muralis filfolensis* from the Filfola rock near Malta, as may be easily seen by comparing specimens with the figures in Boulenger's work, "Second Contribution to Our Knowledge of the Varieties of the Wall-lizard (*Lacerta muralis*)," Trans. Zool. Soc. London, Vol. XX, pt. 3, February, 1913, Pl. XVII, Fig. 5. Even the two dark longitudinal bands on the middle ventral row of each side are present in both forms (compare Pl. XX, Fig. 3a).

Such conformity of eastern and western wall-lizards is not rare. We find it between *erhardi* and the Iberian *bocagei,* sometimes very strikingly.

The largest specimen collected is 187 mm. long (head and body 65—much longer than in the largest examined by Boulenger); scales across middle of body 54–64 in males, 52–56 in females; transverse rows of ventrals 26–28 in males, 28–31 in females; collar plates 8–12; scales from symphysis of chin-shields to collar 25–30 in males; 21–26 in females; femoral pores 22–26 in males, 20–27 in females; lamellae below fourth toe 26–30. The tip of the fourth toe reaches the shoulder (rarely the collar or the axilla) in males, the axilla (rarely the shoulder, elbow or wrist) in females. The masseteric plate is separated from the supratemporal plates by one row of scales or is in contact with them; it is separated from the posterior labials by a single row of scales, or by two rows.

In adult males upper and lower labials and throat are white, marbled or spotted with black, or black with greenish white spots; the ventrals are often margined with black, or, as already mentioned, with two black longitudinal bands, running on the middle row of each side. The upper side is grayish-brown, more or less distinctly reticulated with darker

and always with a dark median line, zigzag or consisting of confluent spots; lateral zone reticulated coarsely with blackish, or irregularly cross-barred with round blue spots in the meshes of the reticulation around the insertion of the fore limbs.

Females are whitish below (throat bright yellow in one specimen, but the color has disappeared in alcohol); throat has a few dark brown spots; above light brown or grayish.

This lizard was found in abundance under and near stones—probably the remains of a wall. It was often associated here with *Gymnodactylus kotschyi,* which is nearly as frequent. Adult males were, however, rather rare at this place, which was not far from the harbor of Adamas.

It is unknown whether this form is distributed beyond Melos. Boulenger's statement that he received from me specimens from Erimomelos, a rocky island near Melos, is erroneous. All my specimens are from the locality on Melos mentioned above. A single male with reddish-brown scarcely reticulated back was taken on the way to Mt. Prophet Elias.

Data on 10 specimens from Melos:

	1	2	3	4	5	6	7	8
Male	187	65	64	28	12	28	26–25	30
Male	167	58	60	27	10	27	23–23	27
Male	154	54	54	26	10	30	23–23	27
Male	140	52	54	28	8	26	23–23	27
Male	tail regenerated	65	58	26	10	25	24–22	27
Female ..	145	57	54	31	9	25	24–23	27
Female ..	139	50	56	30	9	24	24–24	30
Female ..	139	50	52	29	9	24	20–21	26
Female ..	131	53	52	28	8	21	21–22	27
Female ..	130	60	52	29	9	26	20–21	29

Ophiops elegans ehrenbergi Wiegm.

The snake-eyed lizard is not known from any island of European Greece, but I found it on Mytilene (May 20) and frequently on Lemnos (May 22–27). It was very easily caught on the latter island, owing to the low vegetation

which covers the slopes of the valleys. Where the slopes are covered with stones, it quickly finds a hole for concealment. Males ran much faster than the females, none of which were gravid at the time.

If I accept the theory of the division of the coastal and insular *Ophiops* from those of the interior of Asia Minor, it is only because I took one specimen on Mytilene which had the increased number of 36 scales and plates round the middle of the body, whereas all specimens from Lemnos have 30–32 scales. These forms differ slightly only in the number of scales.

Males are normally more strongly spotted with black on the back, the light longitudinal lines are less distinct and the lips violet-gray. Females are often merely striped without traces of dark spots and the lips are white. One female contained ripe ova of relatively large dimensions.

Data on the specimens collected:

Female: Mytilene, May 20. Total length 135 mm., head and body 50 mm.; scales round body 36; femoral pores 10; no occipital.

Five males, 5 females: Lemnos, May 22–27. Largest male 157 (42) mm., largest female 145 (51) mm.; scales round body 30–32; femoral pores 9–12 (11 x 10, 9 x 11, 3 x 9, 1 x 12); mostly 4 supralabials before suborbital, only once 5; in 5 specimens occipital more or less separated from interparietal.

Ophiops is the specific lizard of the islands of the coast of Asia Minor and it is known to occur on all the islands which have been visited by naturalists. Besides Mytilene and Lemnos, where I first found it, it occurs on Chios, Samos, Nikaria, Symi, Chalki, Tali, Kos, and Rhodes. The limit between the islands of the Aegean Sea which have *Ophiops* and those which do not is the same as the limit between Asia Minor and Europe. However, a single specimen has been collected by O. Reiser at Kryoneri, Acarnania, in the interior of Greece. It would be highly interesting to determine whether or not this lizard is really indigenous there. If

Kryoneri were situated on the sea, it would be possible for it to have been accidentally introduced.

Ablepharus pannonicus Fitzinger

This little skink is rather common in Greece—on the Ionian Islands as well as on the mainland and the Aegean Archipelago. My specimens are from Athens, Hymettus, April 20; Mykonos, April 12–13; Melos, April 16; Skopelos, May 8.

It is found mostly in open places with low vegetation and, notwithstanding its small size and smoothness, is not difficult to catch. The largest specimens (2 from Mykonos) are 95 mm. long (tail 55–58 mm.). The species has been recorded from the following islands of the Aegean: Andros (Oertzen), Tenos (Oertzen), Mykonos (Erhard, Bedriaga), Syra (Bedriaga), Melos (Bedriaga).

It is further known from the Southern Sporades: Armathia and Karpathos (Oertzen), as well as from Rhodes (Erber, Festa), Chalki and Symi (Oertzen), Kos (Hertzog). I have not seen it on the islands of Scyros, Lemnos, and Mytilene and, since it is easily detected wherever it occurs, I do not believe that it will be found to exist on these islands.

Chalcides ocellatus Forsk.

Rather common near Athens, where I caught it on Mt. Hymettus (May 20) and near Phaleron (April 22). I saw a specimen on the Turkowuni near Athens and collected it on the Lycabettus (Athens) in 1901. It is known in Greece only from the eastern parts: Attica, Megara, Stura in Euboea; from a small island between Aegina and Angistri (Oertzen), from Kea (Oertzen), and from Crete. Kea is the island of the Cycladic Archipelago nearest to the mainland. The species is abundant on Crete, but has not been found on any island of the western Aegean except Kea.

Of the specimens collected, the largest is 185 mm. long (tail 95 mm.). All have 30 scales around middle of body.

Ophiomorus punctatissimus Bibr. & Bory
(Plate VI, Fig. 29)

This is one of the rarest lizards of Greece; it is restricted to the mainland. It is found principally in the Peloponnesus, but occurs as far north as Larissa, Thessaly. The Vienna Museum has a particularly large specimen taken in this locality.

I had no difficulty in finding this tiny and beautiful limbless skink, since I had learned during my trip of 1900 of a good locality on the vast area of Acro-Corinth. Exactly five minutes after I had reached the place (April 23) I found the first specimen, and twenty minutes after this the third and last. Outside this place one may find many other animals, especially *Typhlops*, but no *Ophiomorus*.

This species is not very quick and every specimen seen may be caught. It lives under stones.

The largest of my specimens has a total length of 53 mm.

Typhlops vermicularis Merr.

Hymettus near Athens, April 20.
Acro-Corinth, April 23.
Mytilene, May 21.
Larissa, May 14.

The largest specimen, from the interior of the "Kastro" of Acro-Corinth, measures 260 mm. This species is distributed over a wide area in Greece, but on the Cyclades it is known only from Naxos. Since it is easily found under stones wherever it occurs, and since I did not come across it on Scyros and Lemnos, where I searched for an entire week, I suppose that it is not present on these islands, and probably very rare on the others. It is rather common on the mainland. Of the islands of the coast of Asia Minor it is known from Samos, Kos, and Rhodes.

Eryx jaculus L.

I found a half-grown specimen under a stone near Philoti, Naxos. It has been known from this island since the Expedi-

tion scientifique du Morée. O. Reiser also collected specimens on the sandy shore of Naxos, a more appropriate locality for a sand-snake than the vicinity of a village in the interior. But it may be pointed out here that even these species of snakes which are best adapted to life in the sand of deserts are quite as well adapted for existence in a stony environment if the locality is dry. *Cerastes cornutus, Psammophis sibilans,* and *Tarbophis obtusus* are by no means restricted to the sandy desert. The first is found in very stony parts of Tunis and western Algeria, the others in gardens near Cairo and Khartoum. *Dasypeltis scabra,* a desert sand-snake like *Cerastes* and *Echis* in its scalation, is found practically everywhere in southern and tropical Africa up to Middle Egypt.

The specimen from near Philoti measures 290 mm. (tail 38 mm.); scales in 43 rows (Naxos specimen in my collection, collected by Reiser, 41 rows); ventrals 171 (169), subcaudals 34 (22); upper labials 10–10 (10–9); scales around the eye 8–8 (8–9); interorbital rows 6 (6); internasals in contact mesially (in contact in Naxos specimen).

Besides Naxos, the sand-boa is known from Tenos (Exp. sci. Morée), Amorgos (Fiedler), Polinos near Melos (Olivier, type locality), and Kimolos near Melos (Schneider). It has been found in the vicinity of Athens and is recorded from Corfu (Gray), where it seems not to have been collected for 70 years (Guenther, Cat. Sn., 1849); but as it has been discovered in southern Albania by Veith, its occurrence on Corfu is not improbable. *Eryx jaculus* is further known from the island of Kos on the coast of Asia Minor, but from no other. All Greek specimens belong to the subspecies *turcica* Hick.

Natrix natrix L.

I have found two quite different forms of this species. Rechinger collected on Scyros a very dark, blackish one, with two narrow whitish longitudinal lines on the back, head brown, marbled with black, light collar of rather indistinct gray. Another Scyros specimen without light lines was brought to me dead and with the head mutilated. A second

form was light gray with broad, but not very distinct light dorsal bands, large black dorsal spots arranged quincuncially and a distinct light collar; halves of the dark collar, as is usual in southern specimens, were widely separated. This specimen I found on Lemnos in a corn-field. I was attracted by the clamor of a frog which I could not see in the field, but I followed its cries, which were repeated at rather regular intervals, indicating that it must be the prey of a snake. Finally reaching the spot from whence the sounds came, I saw the snake and seized it but the frog escaped.

Data on specimens:

Male, Scyros, May 2. (*Tropidonotus natrix* var. *moreoticus* Bedriaga, Amphibien und Reptilien Griechenlands, Bull. Soc. Nat. Moscow, 1882, p. 140.) Ventrals 174; subcaudals 77; total length 518 mm., tail 122 mm.

Female, Lemnos, May 23. (*Coluber Persa* Pall. Zoogr. Ross.- Asiat. III, 1811, p. 41, 35.) Ventrals 171; subcaudals 59; total length 900 mm.

This species is said to occur on the islands of Tenos (Erber), Melos and Mykonos, but Bedriaga failed to find any water snakes on these islands and my experience was the same. I know of only two exact records from the Cyclades—Naxos, where it was collected by Reiser, and Syra (Oertzen). From the islands of the coast of Asia Minor, it is recorded from Chios (Oertzen) and Kos (Herzog).

Elaphe quatuorlineata Lacép.

Two specimens were collected, a young individual on the Parnes Range at about 1200 m. by Rechinger, and an adult female, which was brought to me at Linaria, Scyros Island. This specimen had been killed and lay exposed to the sun so that it was badly spoiled. For this reason I left my horse, which carried the snake, far behind me when returning. However, as it was the first snake of this species found on the Northern Sporades, I brought it home. Though its length is 1345 mm. (tail 240 mm.) and it shows the dark stripes of the

adult quite distinctly, the ventral side still bears the juvenile pattern.

Female: scales 25; ventrals 217; subcaudals 68.

Young: scales 25; ventrals 221; subcaudals 71.

This powerful snake, which, according to Bedriaga, reaches a length of nearly two meters, has been found by him only on Mykonos of the Cycladic Archipelago, where it was common at the time he visited this island. I was not so fortunate as to secure a specimen of the "Laphita," as it is called there. On the mainland it occurs in Attica and Aetolia, and in the Peloponnesus (Taÿgetus and Voidhia). On the Ionian Islands it has been found on Corfu and Cephalonia.

Elaphe leopardina Bp.

(Plate VI, Figs. 30–32)

This handsome snake seems to be rather common on the Northern Sporades, and I took three specimens on Scyros and three on Skopelos. It varies on both islands and the typical form *leopardinus* lives in the same places as the striped forms. Though this species is recorded from Syra (Erhard), Melos (Bedriaga) and Andros (Athens Museum, according to Bedriaga), I have not seen a specimen in the Cyclades. It is common on the mainland from Thessaly to the Peloponnesus and is found on Corfu and Cephalonia, as well as on Chios and Rhodes. Of the Scyros specimens, two belong to the spotted form, but the large reddish, black-margined dorsal spots of Dalmatian specimens are rather indistinct and are more pronounced posteriorly. The third specimen shows four brown dorsal longitudinal stripes in addition to the spots, which are less distinct than in the former specimens. Still different are three half-grown specimens from Skopelos. One is a quite typical *leopardinus* with bright dorsal spots; the second shows two longitudinal bands of the same color, margined with dark similar to the spots of the first; the third has the vertebral zone whitish, margined with a black line.

Data on Scyros specimens:

Male: 810 mm. (tail 163 mm.); scale rows 25; ventrals 243; subcaudals 88.

Male: (tail mutilated); scale rows 24; ventrals 238; subcaudals ?.

Female: 920 mm. (tail 165 mm.); scale rows 27; ventrals 248; subcaudals 75.

Data on Skopelos specimens (Plate VI, Figs. 30–32):

Scale rows 27; ventrals 243; subcaudals 80.

Scale rows 27; ventrals 248; subcaudals 75.

Scale rows 27; ventrals 244 ?; subcaudals 77.

This species is probably not rare in certain localities of Scyros and Skopelos, since I received three specimens on Scyros on the same day and had the same experience on Skopelos. I have never seen a live specimen.

Coluber caspius Lepechin

I received a specimen of this species from my friend, Rechinger, who caught it on Lemnos, May 23, and found a cast skin on the same island, May 26.

The specimen, a female, has 206 ventrals and 100 subcaudals, and is quite typical in every respect.

This snake is known from the three Cycladic islands. Tenos (Erber), Seriphos and Andros (Bedriaga), from Corfu but not from the mainland, and from Crete, where *C. gemonensis* Laurenti occurs. Bedriaga mentions two other forms of the latter species from Greece, but no exact locality is given and it remains doubtful whether they really occur on the Cyclades.

As this species reaches gigantic dimensions, I do not consider it necessary to give the exact measurements of this snake, which is about 1 m. long.

The specimens from Kos and Rhodes belong to the southern form, *asiana* Bttgr. The limit of the range of this form on the islands is not known. On the mainland of Asia Minor it must be situated south of Ephesus.

Coluber dahlii Fitzinger

I found a specimen in an oak bush on the Parnes Range above Menidion (800 m.), April 24, and saw a copulating pair

on a hill on Lemnos, May 27, but succeeded in catching only the male. This fine snake seems to be common near Athens, where I collected my first specimen in 1901 on Mt. Hymettus, but it was not known from any island of the Aegean Sea north of Kos and Rhodes. It is exceedingly quick in its movements.

Male, Lemnos: ventrals 211, subcaudals 127; total length 980 mm., tail 305 mm.

Female, Parnes: ventrals 220, subcaudals 124; total length 931 mm., tail 290 mm.

Contia modesta Martin

I caught three specimens of this small snake on Mytilene, where it must be very common. Two of these were hidden under stones. The third and largest I found running over the ground on a grassy slope. This species is quite inoffensive. The large specimen, a female, measures 570 mm. (tail 136 mm.) and has 171 ventrals and 70 subcaudals. The others are half-grown and show the characteristic pattern of the upper side of the head distinctly; ventrals 173, 177; subcaudals 72, 71.

This species I did not find on Lemnos, although I searched for a week, during which time I turned many hundreds of stones. The three specimens from Mytilene were caught within a few hours. It is one of the commonest snakes of Asia Minor, and is also known from Chios (Boettger) and Samos (Werner, Oertzen). This is a strictly Anatolian species which evidently does not occur on the half-Asiatic island of Lemnos.

Tarbophis fallax Fleischm.

At Scyros I was given an adult female on May 2, which was cut in three pieces. I caught a specimen near the town of Scyros May 4 and found a dead specimen not far from Linaria on Scyros May 5; scales 19, ventrals 200, 203, subcaudals 50, 56. In one specimen the eighth supralabial is triangular and only its point reaches the labial margin. The

third, fourth and fifth supralabials (only once the fourth and fifth) reach the lower border of the eye. The cat-snake is known from the following islands of the Cycladic Archipelago: Melos (Bedriaga, Reiser), Mykonos (Bedriaga, Oertzen), and Tenos (Bedriaga). I do not know it from the Ionian Islands, but it has been found on Cerigo (Storch, Reiser) and on the Strophades in the Ionian Sea, where it has been collected by Reiser, the only zoölogist who seems to have visited these out-of-the-way islands.

Coelopeltis monspessulana Hermann

This species, which has not been collected by any zoölogist on the Cyclades, occurs on Skopelos Island, where I received two specimens in a single day. The larger one, the largest snake I found on the islands, has a length of 1400 mm. and had been killed and brought in by a girl much shorter than the snake. This specimen as well as the other belongs to the var. *neumayeri* Fitzinger, which alone seems to represent the species in Greece. It is recorded from Corfu (Jan), Cephalonia, and Zante (Werner), but it is rarely found on the eastern part of the mainland and is known from only one island off the Asiatic border in the Aegean Sea, Chios. Scales 17; ventrals 174, 171; subcaudals 78, 67; loreals 2, 3.

The large specimen is olive above, greenish-white below; outer row of scales margined with yellow above and below. The smaller specimen, a female like the other, is uniform olive above, but shows distinctly the symmetrical pattern on the head found in the form *insignitus* Geoffr. Supralabials brown above, blackish below, with a white spot between both colors; sublabials, chin-shields and gular scales blackish margined with white. Ventrals and subcaudals gray, with yellowish-white spots arranged in rather distinct longitudinal rows; a light median line runs over the whole lower side of the body. Subcaudals gray margined narrowly with whitish.

Vipera ammodytes meridionalis Boulenger

This is the smallest race of *V. ammodytes*, and, as shown later, the adults are only a little more than half as long as

those from the northernmost part of its distribution, Carinthia in southern Austria. I collected it on the islands of Naxos and Ios and it was brought to me on Mykonos. It had never before been recorded from Ios, but had been collected on Tenos, Andros and Mykonos (Bedriaga), on Naxos (Oertzen, Reiser), on Delos (Ebner, Fiedler), and on Scyros (Oertzen). Venomous snakes are not known on Scyros, Skopelos, and Kyra Panagia. They are also probably unknown on the other islands of the Northern Sporades, and I did not hear of vipers occurring on Lemnos. However, the fact that the people do not know of venomous snakes occurring on their islands does not prevent their killing every snake they find. The Cycladic vipers are distinguished by a wavy brown dorsal band, margined with darker, and frequently also by a dark interorbital, line. Sexual dimorphism in color, so regular in Alpine specimens, seems not to occur in the Greek specimens, since males and females are quite alike.

	Total length	Length of tail	Scale rows	Ventrals	Subcaudals	Supralabials	Sublabials	Scales around eye	Interorbital rows
Male Mykonos ..	415	45	21	140	33	9–9	11–11	11–10	5
Male Naxos	318	42	19!	146	35	9–9	10–10	11–11	6
Female Ios	218	26	21	143	40	9–9	11–10	11–9	5
Specimens from Greece in my collection									
Male Delos	425		21	144	32	9–9	11–11	10–10	5
Female Delos	320		21	141	27	9–9	11–11	12–11	6
Female Ithaca	330		21	139	31	9–9	11–10	10–11	4
Male Attica	337		21	139	32	9–9	11–11	11–11	7

It is interesting to note, by comparing over a hundred specimens in my collection from nearly all parts of its distribution in Europe, the decrease in size and scalation from north to south:

Maximum length

Carinthia	810 mm.	Herzegovina and Montenegro	540 mm.
North Croatia (Continental)	725	Dalmatia	520
Illyria (Trieste to Fiaul)	710	Macedonia	510
Southern Styria	693	Greece	425
Bosnia	685	Transylvania	660
Carniola	665	Rumania	555
Istria	620	Bulgaria	555
Albania	605	Asia Minor	476
South Croatia (Littorale)	570	Greece	425

Percentage of the occurrence of 23 (instead of 21) scale rows

Southern Styria	2	..		Dalmatia	9	6	
Carinthia	9	1		Bosnia	17	12	
Carniola	11	1		Herzegovina	5	1	
Istria	3	..		Albania	1	1	
Illyria	5	1		Montenegro	1	1	
North Croatia	9	1		South Croatia	3	1	
	39	4	10%		36	22	61%

Among all the specimens from southern and western areas —those from Transylvania, Roumania, Bulgaria, Asia Minor, and Greece—I know of but one specimen with 23 scale rows.* The percentage of specimens with 23 rows is greatest in Dalmatia and Bosnia (66–70). The only specimen with 19 scale rows of which I know was taken on Naxos and is in the present collection.

The southern form only, *meridionalis,* differs distinctly from the other in the number of ventrals (133–147), but there are also specimens from Dalmatia and Bosnia with very low numbers (137–143). The numbers of subcaudals are in no way distinctive.

* Hagios Elias, Taygetos, Greece.

Vipera lebetina L.

This is one of the most interesting reptiles of all Greece and, though I was not so fortunate as to capture it alive, I succeeded in finding a specimen which must have been killed but a short time before I found it. This viper is restricted in Europe to Melos and probably the small islands in its immediate vicinity, Kimolos and Polinos in the east and Erimomelos in the west. The species is not, as might be supposed, identical with the hornless vipers of Asia Minor (*V. xanthina* Gray and *V. bornmuelleri* Werner), but with the north African *V. lebetina* L. It is remarkable that, as the common lizard of Melos is quite different from all other forms of the Cyclades, and just as the indigenous name for this lizard is fundamentally different from the various names given to it on the other Cyclades, the name of the Melos viper is ἔχιδνα (''echidna''), whereas *Vipera ammodytes* is known on all the Cyclades as φίδια (''phidia,'' from ''ophidia''). *V. lebetina* is the only viper on Melos Island, and no one there knows of a horned snake like *V. ammodytes.* This island seems, therefore, to have been separated for a relatively long time from continental Greece as well as from the Cyclades. It cannot have been connected with Crete, which has a quite distinct herpetological fauna.

The specimen which I brought from Melos is a female and has a total length of 590 mm. (tail 85 mm.); scale rows 23; ventrals 153; subcaudals 44. In a specimen from the same island in the Sarajevo Museum, Bosnia, the respective scale counts are 23, 126, 42. Another specimen from Melos taken by the excellent ornithologist, O. Reiser, and now in my private collection, has the following count: 23, 154, 41.

Rana ridibunda Pall.

I collected this widely distributed species on Scyros, Mykonos, and Mytilene, and saw it on Lemnos. It is known further from Seriphos (Bedriaga), Melos (Bedriaga), Samos, Kos and Rhodes (Oertzen), and is common everywhere on the mainland and on the Ionian Islands.

The Scyros specimens (male, female, 2 young) agree well with the common Balkan type. The adults are olive brown with darker spots, but without light spinal line; total length 75 mm. I found the young in a brook in the interior of the northern part of the island and the adults in a swamp not far from the sea, near Linaria.

Data on specimens:

Male: Linaria, Scyros. Length 75 mm.; hind limb 120 mm.; inner metatarsal tubercle one third of fifth toe; tympanic disc three fourths of eye; diameter of eye two fifths of snout; narial distance equal to interorbital distance.

Female: Linaria, Scyros. Length 75 mm.; hind limb 120 mm.; inner metatarsal tubercle two fifths of fifth toe; tympanic disc two thirds of eye; diameter of eye two thirds of snout; narial distance smaller than interorbital distance.

Female: Mykonos, April 13. Length 38 mm.; hind limb 74 mm.; inner metatarsal tubercle two fifths of fifth toe; tympanic disc one half of eye; diameter of eye three fourths of snout; nasal distance a little greater than interorbital distance.

Young, Scyros, May 5. Length 38 mm.; hind limb 74 mm.

Young, Mytilene, May 20. Length 27 mm.; hind limb 62 mm.

The Mykonos specimen has some resemblance to *R. esculenta*; upper and lower lip, and sides of body heavily spotted with blackish; limbs barred with dark olive; a light spinal line distinct; throat and breast spotted with dark olive; back very warty (as in the small specimen from Mytilene).

Bufo viridis Laur.

This toad is widely distributed in Greece and is much more common on the Aegean Islands than *B. vulgaris* Laur. I found it on Lycabettus Hill, Athens, April 19 (male and female); on Mt. Parnes near Athens, 1000 m. (half-grown female); on Naxos, April 9 (female); on Skopelos, May 9 (2 males and 2 females); and on Lemnos, May 27 (2 females). It was most common on Skopelos, where the children brought

me a number of specimens after a heavy rain. The largest specimen is from Naxos (90 mm. total length). It is known from Tenos (Erber), Syra (Bedriaga), Samos and Nikaria (Oertzen), Rhodes (Festa), from Corfu and Cephalonia, as well as from Crete.

The specimens do not seem to differ from those in Central Europe.

Distribution of Reptiles and Amphibians on the Islands of Greece and Asia Minor

List of Abbreviations

B.	Bedriaga	G.	Guenther
Br.	Beier	H.	Heldreich
Bt.	Boettger	Hg.	Herzog
DB.	DeBetta	Loeb.	Loeblecka
D.	Doria	M.	Exp. Morée
E.	?	Oe.	Oertzen
Eb.	Ebner	R.	Reiser
Eh.	Erhard	Sch.	Schulz
Erb.	Erber	St.	Storch
F.	Fiedler	Str.	Strauch
Fe.	Festa	T.	Tournefort
Fo.	Forsyth Major	W.	Werner

Ionian Islands

Corfu (Kerkyra)

Testudo graeca
Clemmys caspia
Emys orbicularis
Hemidactylus turcicus
Lacerta taurica ionica
Lacerta viridis major
Algiroides nigropunctatus
Anguis fragilis
Typhlops vermicularis Blgr.
Eryx jaculus G.
Natrix natrix
Elaphe quatuorlineata Br.
Elaphe leopardina
Coelopeltis monspessulana
Coluber caspius
Coluber dahlii Str.
Molge vulgaris
Rana ridibunda
Rana dalmatina
Bufo viridis
Hyla arborea

Cephalonia (Kephallenia) (W.)

Clemmys caspia
Emys orbicularis
Tarentola mauritanica
Gymnodactylus kotschyi
Hemidactylus turcicus Br.
Lacerta taurica ionica
Lacerta viridis major
Algiroides nigropunctatus
Algiroides moreoticus
Anguis fragilis
Ablepharus pannonicus
Elaphe leopardina
Elaphe quatuorlineata
Coelopeltis monspessulana
Vipera ammodytes
Molge vulgaris
Rana ridibunda
Bufo viridis
Hyla arborea

Leukas (Santa Maura) (W.)

Testudo graeca
Emys orbicularis
Lacerta viridis major
Ophisaurus apus
Algiroides nigropunctatus W.
Anguis fragilis

Ablepharus pannonicus
Natrix tesselata DB.
Typhlops vermicularis
Rana ridibunda
Bufo vulgaris
Hyla arborea
Molge vulgaris

Ithaca (Ithaki) G.
Tarentola mauritanica
Lacerta taurica ionica
Lacerta viridis major
Algiroides nigropunctatus (?)
Algiroides moreoticus (?)
Ablepharus pannonicus
Vipera ammodytes

Zante (Zakynthos) (W.)
Clemmys caspia
Tarentola mauritanica
Lacerta taurica ionica
Lacerta viridis major H.
Algiroides moreoticus D.
Anguis fragilis
Ablepharus pannonicus
Natrix natrix
Coelopeltis monspessulana
Rana ridibunda
Bufo vulgaris H.
Hyla arborea

Cerigo (Kythera)
Hemidactylus turcicus R. Sch.
Gymnodactylus kotschyi St. Sch.
Lacerta viridis major St.
Ablepharus pannonicus St.
Coluber gemonensis R. St.
Elaphe leopardina Sch.
Tarbophis fallax St.
Typhlops vermicularis St.

Crete (Candia)
Clemmys caspia
Hemidactylus turcicus
Tarentola mauritanica
Lacerta viridis major
Lacerta muralis
Chalcides ocellatus
Natrix tessellata
Coluber gemonensis
Elaphe leopardina
Tarbophis fallax
Rana ridibunda
Bufo viridis
Hyla arborea

Cyclades
Kea (Ceos)
Lacerta viridis major Oe.
Chalcides ocellatus Oe.
Tarbophis fallax Oe.

Kythnos (Thermia)
No species known

Siphnos (Siphanto)
Clemmys caspia Eh. H. B.

Melos
Clemmys caspia B.
Natrix natrix B.
Gymnodactylus kotschyi B. R. W.
Lacerta viridis major B. R.
Lacerta muralis B. R. W. (= *erhardi milensis*)
Ablepharus pannonicus B. W.
Elaphe leopardina B.
Tarbophis fallax B. R.
Vipera lebetina B. R. W.
Rana ridibunda B.

Seriphos (Serpho)
Clemmys caspia B.
Lacerta viridis major B.
Lacerta muralis B. (= *erhardi naxensis*)
Coluber caspius B. F.
Rana ridibunda B.

Kimolos (Argentiera)
Eryx jaculus (Schneider)

Polinos (Polino)
Eryx jaculus F. (Olivier)

Pholykandros (Pholegandros)
No species known

Sikinos
No species known

Amorgos
Clemmys caspia Eh.
Eryx jaculus F.

Naxos (Naxia)
Clemmys caspia E. H. W. R.
Gymnodactylus kotschyi B. Oe. W.
Hemidactylus turcicus B. Oe. W.
Agama stellio F. Eb. B. R.
Ophisaurus apus Eh.
Lacerta viridis major B. R.

Lacerta muralis R. W. (= *erhardi naxensis*)
Typhlops vermicularis M.
Eryx jaculus M. Oe. R. W.
Natrix natrix R.
Vipera ammodytes F. Oe. R. W.
Rana ridibunda Eh.
Bufo viridis Eh. W. R.
Hyla arborea B.

Mykonos
Clemmys caspia Eh. B.
Gymnodactylus kotschyi B. Oe. W.
Agama stellio T. F. M. Eh. B. Oe. W.
Lacerta viridis Eh. B.
Lacerta muralis B. Oe. W. (= *erhardi naxensis*)
Ablepharus pannonicus Eh. B. W.
Natrix natrix B.
Elaphe quatuorlineata B.
Tarbophis fallax B. Oe.
Vipera ammodytes B. W.
Rana ridibunda Eh. B.

Delos
Gymnodactylus kotschyi Eb.
Hemidactylus turcicus Eb.
Agama stellio T. F. M. Eb.
Lacerta muralis Eb. (= *erhardi naxensis*)
Ablepharus pannonicus Eb.
Vipera ammodytes F. Eb.

Ios (Nios)
Gymnodactylus kotschyi W.
Lacerta muralis W. (=*erhardi naxensis*)
Vipera ammodytes W.

Thira (Santorin)
Lacerta muralis Eb. (= *erhardi naxensis*)

Paros (Minoa)
Agama stellio B.

Antiparos
Agama stellio F. B.

Tenos
Clemmys caspia B. M.
Gymnodactylus kotschyi B. Oe.
Anguis fragilis ? Erb.
Lacerta viridis major B. Erb.
Lacerta muralis Oe. Erb. B. (= *erhardi naxensis*)
Ablepharus pannonicus Oe. Erb.
Eryx jaculus M.
Natrix natrix Erb.
Natrix tessellata Erb.
Coluber caspius Erb.
Tarbophis fallax B. Erb.
Vipera ammodytes B. Erb.
Molge vulgaris ? Erb.
Rana ridibunda Erb. B.
Bufo viridis Erb.
Hyla arborea Erb.

Phanar
Lacerta muralis B. (= *erhardi naxensis*)

Andros
Clemmys caspia Eh.
Coluber caspius B.
Elaphe leopardina B.
Vipera ammodytes B. F.
Gymnodactylus kotschyi Oe.
Lacerta viridis major B.
Lacerta muralis Oe. B. (= *erhardi naxensis*)
Ablepharus pannonicus Oe.
Rana ridibunda Eh. Oe.
Bufo vulgaris Oe.

Syra (Syros)
Clemmys caspia B.
Testudo graeca ? Eh.
Gymnodactylus kotschyi Oe. Erb.
Hemidactylus turcicus Str.
Lacerta viridis major Eh. B.
Lacerta muralis Oe. B. (= *erhardi naxensis*)
Ablepharus pannonicus Erb. B.
Natrix natrix Oe.
Elaphe leopardina Eh. Erb.
Vipera ammodytes Oe.
Rana ridibunda B.
Bufo viridis B.

Northern Sporades
Scyros
Clemmys caspia W.
Gymnodactylus kotschyi W.
Hemidactylus turcicus W.
Lacerta viridis major W.
Lacerta taurica gaigeae W.
Natrix natrix W.
Elaphe quatuorlineata W.

Elaphe leopardina W.
Tarbophis fallax W.
Rana ridibunda W.

Skopelos (Peparethos)
Lacerta erhardi ruthveni W.
Ablepharus pannonicus W.
Elaphe leopardina W.
Coelopeltis monspessulana W.
Bufo viridis W.

Kyra Panagia
Gymnodactylus kotschyi W.
Lacerta erhardi ruthveni W.

NORTH ANATOLIAN ISLANDS
Lemnos
Testudo iberia W.
Clemmys caspia W.
Ophiops elegans W.
Ophisaurus apus W.
Natrix natrix W.
Coluber caspius W.
Coluber dahlii W.

Mytilene
Ophiops elegans W.
Ophisaurus apus W.
Typhlops vermicularis W.
Contia modesta Oe. W.
Rana ridibunda Oe. Fo.
Bufo vulgaris Oe.

Chios
Agama stellio Bt.
Ophiops elegans Oe.
Chamaeleon vulgaris Eh.
Natrix natrix Bt.
Elaphe leopardina Bt.
Contia modesta Oe.
Coelopeltis monspessulana Oe.

SOUTHERN SPORADES
Nikaria
Agama Stellio Oe.
Ophiops elegans Oe.
Gymnodactylus kotschi Oe.
Hemidactylus turcicus Oe.
Lacerta anatolica Oe. (= *oertzeni Wern.*)
Bufo viridis Oe.

Samos
Gymnodactylus oertzeni Fo.
Agama stellio Oe.
Hemidactylus turcicus Fo.
Lacerta anatolica Fo. Oe. (= *oertzeni Wern.*)
Ophiops elegans Oe.
Ablepharus pannonicus
Chamaeleon vulgaris Fo.
Typhlops vermicularis Oe. W.
Contia modesta Oe. W.
Rana ridibunda Oe. Fo.
Bufo vulgaris Oe.

Kos
Testudo ibera Oe.
Clemmys caspia
Hemidactylus turcicus Hg.
Ophisaurus apus A. Dum.
Agama stellio Hg.
Blanus strauchii Erb. B.
Ophiops elegans Oe.
Ablepharus pannonicus Hg.
Typhlops vermicularis Hg.
Eryx jaculus Hg.
Natrix natrix Hg.
Coluber caspius asianus Hg.
Coluber dahlii Hg.
Rana ridibunda Oe.
Bufo viridis Hg.

Nisyros and Tali
Ophiops elegans Oe.

Chalki
Agama stellio Oe.
Ablepharus pannonicus Oe.

Symi
Gymnodactylus kotschyi Oe.
Agama stellio Oe.
Lacerta anatolica Oe.
Ophiops elegans Oe.

Rhodes
Agama stellio Erb. Oe.
Blanus strauchii Loeb.
Lacerta viridis major E.
Lacerta anatolica Oe.
Ophiops elegans Oe.
Mabuia septemtaeniata Oe.
Ablepharus pannonicus Erb.
Chalcides ocellatus Erb. Fe.
Typhlops vermicularis Erb. Fe.
Coluber caspius Erb. Fe.
Coluber dahlii Fe.
Natrix natrix Fe.

Natrix tessellata Erb.
Elaphe leopardina Fe.
Tarbophis fallax Fe. Erb.
Rana ridibunda Oe. Fe.
Bufo viridis Fe.
Hyla arborea Fe.

Kasos
Gymnodactylus oertzeni Oe.
Tarbophis fallax Oe.

Armathia and Karpathos
Gymnodactylus oertzeni Oe.
Ablepharus pannonicus Oe.

Bibliography

Bedriaga, I. v. 1881. Die Amphibien und Reptilien Griechenlands. Bull. Soc. Imp. Nat. Moscow LV, pt. 1, pp. 242–310; pt. 2, pp. 43–103.

Boettger, O. 1888. Verzeichnis der von Herrn E. v. Oertzen aus Griechenland und aus Kleinasien mitgebrachten Batrachien und Reptilien. Sitz. Ber. Akad. Wiss. Berlin, pp. 139–186.

Cyren, O. 1928. Herpetologisches von einer Reise nach Griechenland. Bl. f. Aquarien u. Terrarienkunde 39: 9–15.

Calabresi, E. 1923. Anfibi e Rettili dell'Isola di Samos. Monit. Zool. Ital. XXXIV, pp. 75–80.

——. 1923. Escursioni Zoologiche del dott. E. Festa nell'Isola di Rodi. Boll. Mus. Torino 38: No. 9, pp. 1–16.

Holtz, M. 1902–3. Das Reptilienleben Griechenlands. Natur. u. Haus, Stuttgart. Jahrgang 11. heft. 16, pp. 241–243.

Müller, L. 1908. Eine herpetologische Exkursion in den Taygetos. Bl. f. Aquarien u. Terrarienkunde XIX, pp. 121–122, 138–140, 149–151, 163–166, 180–182, 188–190, 200–202, 250–252, 267–270.

Werner, F. 1894. Die Reptilien- und Batrachierfauna der ionischen Inseln. Verh. Zool. Bot. Ges. Wien 44, pp. 225–237.

——. 1899. Beiträge zur Kenntnis der Reptilien und Batrachierfauna der Balkanhalbinsel. Wissenschaftl. Mitteilungen aus Bosnien und der Hercegowina. Bd. V, pp. 817–841.

——. 1902. Die Reptilien und Amphibienfauna Kleinasiens. Sitz. Ber. Akad. Wiss. Wien CXI, pp. 1057–1121, 3 pls.

——. 1903. Ueber Reptilien und Batrachier aus Westasien (Anatolien und Persien.) Zool. Jahrb. Syst. XIX, pp. 329–345, pls. XXIII–XXIV.

——. 1912. Beiträge zur Kenntnis der Reptilien und Amphibien Griechenlands. Archiv. f. Naturg. 78. Abt. A, H. 5, pp. 167–180.

——. 1927. Beiträge zur Kenntnis der Fauna Griechenlands. Zool. Anzeiger LXX, pp. 135–143, figs. 1–6.

PLATE I

FIGS. 1–3. *Lacerta taurica táurica* Pall. Larissa

FIGS. 4–6. *Lacerta taurica gaigeae* Werner. Scyros (Fig. 6. Type specimen)

PLATE I

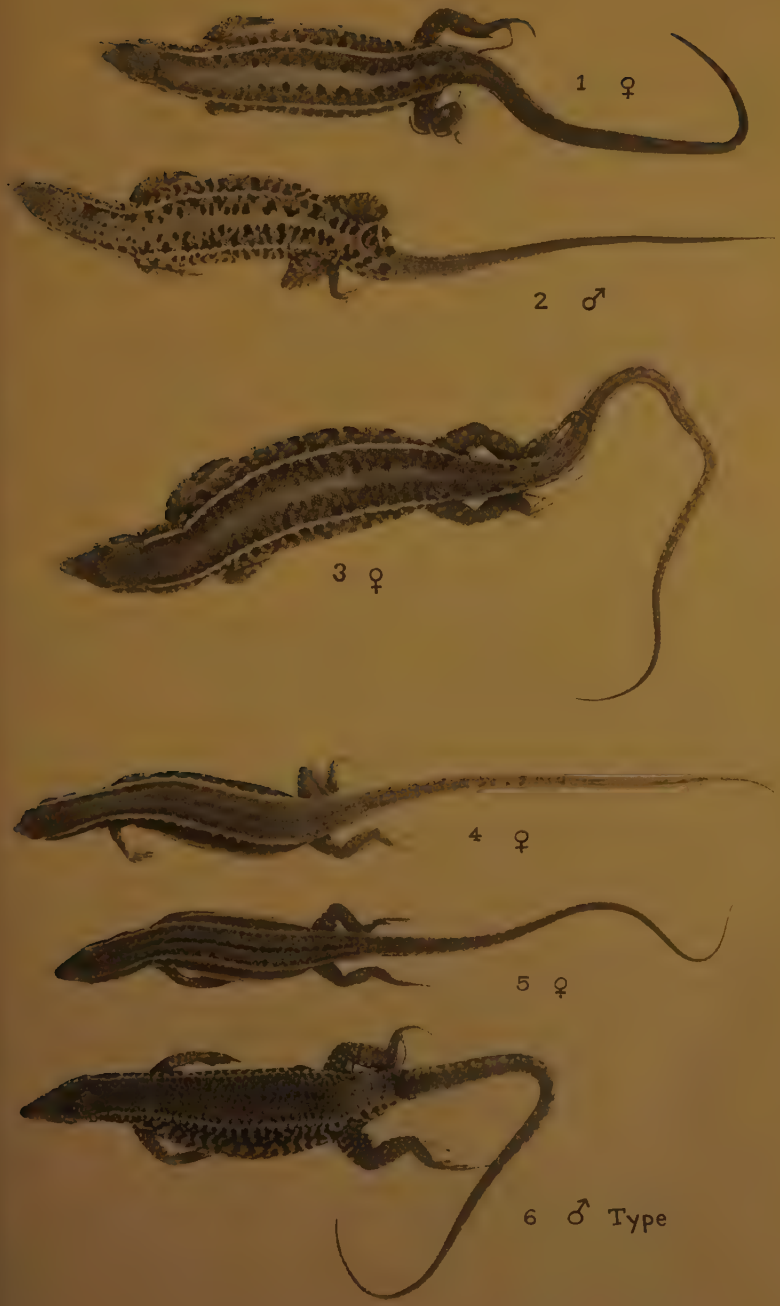


PLATE II

FIGS. 7–8. *Lacerta taurica gaigeae* Werner. Dorsal and ventral views of same animal. Scyros

FIGS. 9–11. *Lacerta taurica gaigeae* Werner. Scyros

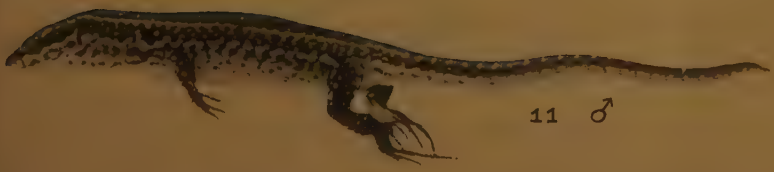
PLATE II

7 ♂

8 ♂

9 ♀

10 ♀



11 ♂

PLATE III

FIGS. 12–14. *Lacerta erhardi naxensis* Werner. Hiloti, Naxos
FIGS. 15–17. *Lacerta erhardi naxensis* Werner. Ios

PLATE III

PLATE IV

FIG. 18. *Lacerta erhardi ruthveni* Werner (uniform green phase). Skopelos

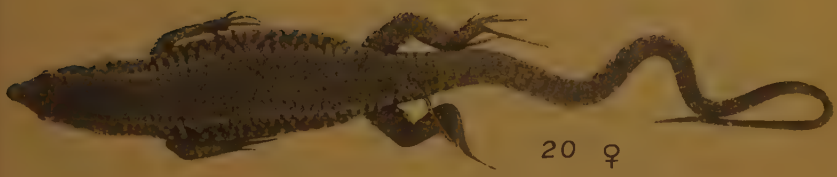
FIG. 19. *Lacerta erhardi ruthveni* Werner. Kyra Panagia (type specimen)

FIGS. 20–22. *Lacerta erhardi ruthveni* Werner. Skopelos

PLATE IV

18 ♂

19 ♂ Type



20 ♀

21 ♂

22 ♂

PLATE V

FIGS. 23–28. *Lacerta erhardi milensis* Bedr. Melos

PLATE V

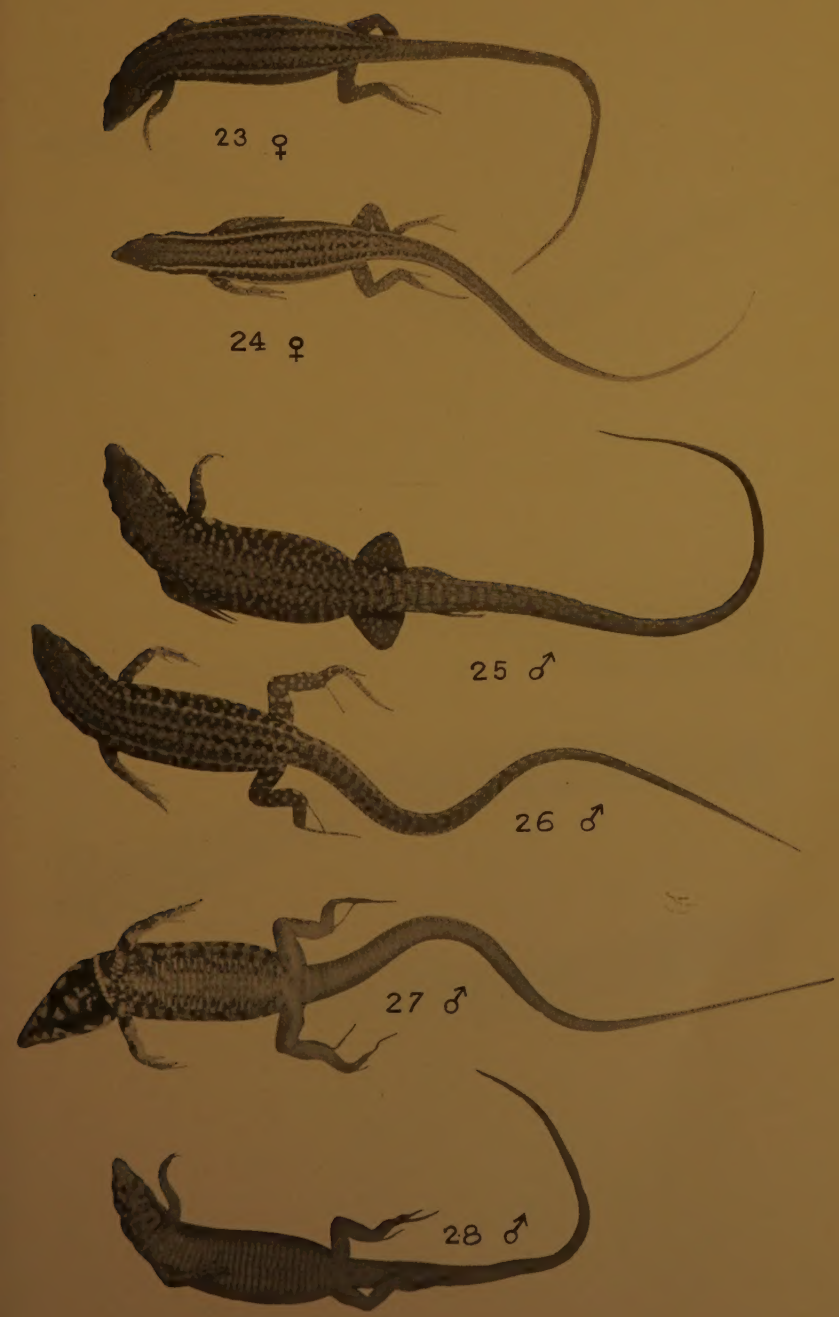
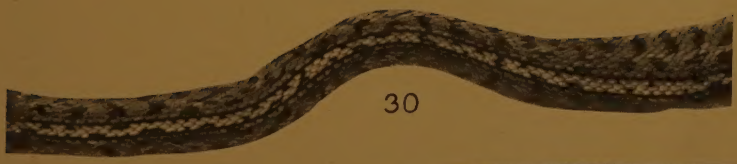


PLATE VI

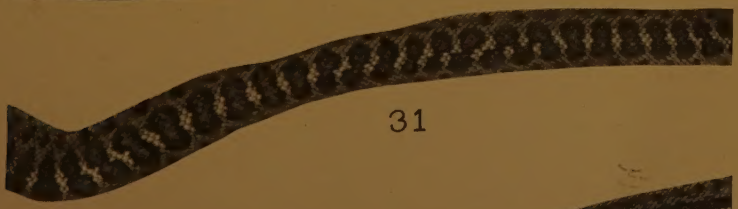
FIG. 29. *Ophiomorus punctatissimus* Bibr. and Bory
FIG. 30–32. *Elaphe leopardina* Bp. Skopelos

PLATE VI

29



30



31

32